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The Tendency of the Automobile Design with the Influence of Social Culture

BY

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A Thesis Submitted in Partial Fulfillment of the Requirements for
the Degree of Master of Fine Art in Industrial Design

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Abstract

With the development of the transportation industry, the automobile has become a critical component of Chinese society. Likewise, Chinese culture has influenced automotive design. However, this influence has generally been limited to an increased focus on environmental sustainability. This paper presents a strategy to explain this influence. The author discussed social changes and evaluates automobile designs for the future. Through the comparison of China history, culture, various type of automobile to analyze changes in functions and structure. This paper also describes the principles of automobile design necessary for future automobile design and automobile industry development in China.

Keywords: Automobile Design China Culture Society

Introduction

In China, since the 90s, the automobile entered Chinese life. Private automotive becomes an essential requirement for many Chinese families. Like the phenomenon of 'Four life appliances' (Radio, Bicycle, Sewing machine, and Watch), and 'Household appliances' (Refrigerator, washing machine, and Television) between the 70s to 80s, the rapid popularity of appliances reflected client interest, purchase tendency in China, and the popularity of products encourages more customers to "get on the bandwagon." Thus, In Chinese society, with the development of the automobile industry, automobiles become more critical for the Chinese family. Meanwhile, Chinese culture and environment also influenced the automobile. However, In the early stage of China automobile industry, the automobile was only designed and worked for the government.

In 1949, after the establishment of the People's Republic of China (PRC). The Chinese government was beginning to develop the automobile industry. In 1953, the first automobile factory FAW (First Automobile Workshop) was constructed and located in Changchun, which was the first automobile factory built and designed by Chinese.¹

After decade development, considerate the China economy environment, the automobile was designed for industrializing construction. Such as trucks, Construction vehicle. Thus, the manufacturer used the basic technique to design and produce the automobile for Light Industry and Heavy Industry and used in fields like transportation, construction, and manufacturing. However, because of the immature technique, the Chinese automobile during that period of time was mainly imitated some successful model made by famous companies in the world. As a result, the process of imitating helped Chinese automobile design into a new stage "The Rapid Development Period of the Automobile Design."

At the end of the 70s, the Chinese government published the "open door policy." Automobiles were

¹ China, Committee on the Future of Personal Transport Vehicles in, National Research. Council, and Engineering, National Academy of Engineering - Chinese Academy of, Personal Cars and China (Washington: National Academies Press, 2003), 37-60.

not only supply to the government, but the public could also have an opportunity to own a car. Consequently, for the public, the automobile with a beautiful exterior and comfortable interior are popular in China and became important features that clients need to consider when Chinese purchasing a car. However, the automobiles in the market could not achieve requirements. For instance, the truck only has two seats which were a limitation for family use. And then, the manufacturer realized the gap of automobile design with developed countries and the change of the automobile development direction. Afterward, the designer could use multiple colors replaced the military green and use the luxurious leather replaced the traditional fabric seat cover. In the market, the model of the sedan became the majority choice for most Chinese families. After the 'opening the Door' Policy, the market of automobiles was getting massive. But China's automobile industry could not meet the requirements of the market. In 1971, during a decade of development, the total production of the Chinese automotive industry increased to 100,000 units. After seven years later the total annual production still under 150,000. Growth was still slow. In the 1970s, even if the overall number of automobile manufacturing factory enhanced to over 50, but most of them were small and had low output.² As thus, some foreign automobiles began to be imported to China. On the other hand, for rapidly increased China's automobiles capacity and design level, the Chinese government sought to cooperate with global companies and create a Sino-foreign contractual joint venture.

Since the 21st century, after 30 years of development, China had one of the fastest developing of the automobile industry in the world. However, new problems have emerged during the automobile development, such as environmental pollution, Traffic congestion.³ For responding to these issues. In China, the government decided to develop the new type automobile, and traditional automobiles would gradually replace by the new energy and smart during the next few decades. energy and smart during

² China, Committee on the Future of Personal Transport Vehicles in, National Research. Council, and Engineering, National Academy of Engineering - Chinese Academy of, Personal Cars and China (Washington: National Academies Press, 2003), 38-50.

³ Holweg, Matthias, Jianxi Luo, and Nick Oliver. "The Past, Present and Future of Chinas Automotive Industry: A Value Chain Perspective." *International Journal of Technological Learning, Innovation and Development* 2, no. 1/2 (2009), 6-63.

the next few decades. On the other hand, with the impacted of technology, social media, and the quick rhythm of life. The driving was no longer be a pleasure and became a burden for drivers. Therefore, the automobile strategic position should retarget functions of the next generation automobile to fit the needs of the future. For the current purpose, the automobile design methods in China has developed with two directions, one was the update of the traditional automobile, and others was a new type of automobile.

New Era of Automobile Design

Currently, in order to sell more cars, the automobile design is influenced by Chinese elements from the size, color, quality, culture, to environment. The designer does much more study and analysis to design a specific automobile. Consequently, for the China market and Chinese clients, the change of the automobile design method helped designers could set up a long term plan for producing a specific model for China, and the designer could bridge a connection between the automobile and user for enhancing the user experience in areas of the space, functions, and materials.⁴

Automobiles Space for Users

In China, based on Chinese culture, the large space usually is defined as 'good'. Thus, Chinese clients prefer ample interior space, which means is users can arrange and use automobile interior space for different purposes.⁵ When the Chinese purchase a car, for the same type of automobiles, they would like to choose the large one. Thus, the manufacturer refined the automobile for the China market. With the large automobile's development got underway in the country, more designers input in a professional role and with the understanding of the regulations is required for the design of the automobile. For example, the manufacturer changed the automobile's proportion, that made the success

⁴ Detlev Mohr et al., "The Road to 2020 and Beyond: What's Driving the Global ...," August 2013, 6-9.

⁵ Dirlik, Arif. "TIMESPACE, SOCIAL SPACE, AND THE QUESTION OF CHINESE CULTURE." *Monumenta Serica* 54 (2006): 417-433

of their car in the market, such as the new BMW 5 Series. (Figure 1) Compared with the original BMW 5 Series, the new model has further lengthened the wheelbase. The full length of the new BMW 5 Series has reached more than 5 meters. BMW increased wheelbase about 10-centimeter compared with the original proportion. The longer wheelbase that added extra user space in the rear. The extended wheelbase gave the car to have a more business-oriented, spacious interior, and slender look. Thereby, passengers seated in the rear will enjoy the seating area that is even more comfortable. providing a more luxurious experience for the rear passengers. According to feedback from the market that automobile improvement has recognized by Chinese consumers.⁶



Figure 1, BMW 5 Series Li, by Wang Xi

From the design perspective, the change of the proportion may be a double-edged sword. For instance, the company like BMW, which integrated driving pleasure into their brand culture and expressed in their exterior design. Thus, the original proportion of BMW automobile is a foundation that replies to this purpose. Whereas for the China market, even if the extending wheelbase will blur the selling Idea, BMW still changed the design strategy and aim at China market for having a share in the China market. Consequently, the cultural experience and user experience that the BMW wants to express to clients have changed. The alteration in length is not only showing in the appearance area but

⁶ Ciprian Florea, "BMW 5 Series Gets Extra Large For China @ Top Speed," Top Speed, April 19, 2017 , accessed May 05, 2019, <https://www.topspeed.com/cars/car-news/bmw-5-series-gets-extra-large-for-china-ar176441.html>.

also changed the original automobile design language, which reflects a result, that the culture changes will alter the direction of the design.

Cultural Influenced in Automotive design

Currently, the truck and sizeable off-road jeep are less popular in China compare with sedan and SUV. Even if they are the same size, but in the United States is the opposite situation. The reason to explain it should be the cultural differences between the East and West.

Compared with the United States, China's automobile culture favors business-oriented or urbanized look automobiles. Due to some policy restrictions, the large truck and jeep with large horsepower need clients to cost more money for gasoline and maintenance. For ordinary families, automobiles are tools for transportation. The powerful off-road vehicles are not fit for Chinese families who live in urban areas. For example, in Beijing, due to Beijing's huge population base, traffic congestion always happened during the rush hour. The large horsepower automobile would waste more gasoline than regular cars, which is unnecessary for ordinary families. Thus, on the design, compared with the off-road jeep and truck, the automobile design style and modeling language are focused on modern city style, while the size and the horsepower are smaller than the jeep or truck. Accordingly, the different types of SUVs and Sedans are designed. On the other hand, Chines clients need to consider various factors to choose a car for daily life using, Meanwhile, they preferred an automobile with the elegant exterior appearance for showing the social identity.

Social Identity in Automobile design

In China, the high price of the automobile which means is good quality and also is a symbol of social status. The automobile becomes a manifestation of user taste and status. In response to this tendency of consumer purchasing psychology. Manufacturers are using design methods and brand culture to show their product-level and impact for society. Therefore, the role or function of cars is different comparing with developed countries. In developed countries such as Europe and America, the role of the automobile is a tool of transportation for daily's life. The advanced automobile industry and the low automobile prices making customers could easily own. Therefore, the meaning implied behind the automobile is weakened and disappeared. Cars are gradually becoming a kind of everyday consumer

goods. However, in China, the automobile is a symbol of identity. Therefore, automobile design tends to use some expensive materials, such as high-grade leather, carbon fiber, alloy materials, and some colors with special meaning to increase the automobile value for social status needs.

The Change in The Automobile's Attributes

During the development with the traditional automobile industry, the birth of new media and technology replaced the traditional technique and has influenced automobile attributes. Such as the new energy car and Self-driving car. The economic environment also is an element that will affect automobile design. For example, after research of the user interaction design, car sharing as a new economy form was created. Under the new economy form, the automobile is not the private property and become part of sharing economy property. Since 2018, Vehicle-sharing projects are carried out in dozens of cities across the country, such as Beijing, Shanghai, Chengdu, and Shenzhen. The new type of service is expected to fuel China's sharing economy in the next few years.⁷

New technology

The emergence of new energy and new technologies vehicles changed the design automobile design strategy, whatever interior or exterior design. For example, If the self-driving car is fully powered by electricity. The electric motors are smaller than the gasoline motor and can fit in the rear, front axle or wheel of the car, which means is the large hood will no longer need. At the same time, the Intake grille in the vehicle can be eliminated, because the electric vehicle does not need air for cooling the motor. Tesla Model 3 is a good example. Also, the door handles will be no longer necessary. Accordingly, some companies have planned to develop face recognition for door opening.

New energy vehicle becomes evidence showed the changes in the design field. The size of the car will be even larger because of the battery board needs to be large enough to maintain sufficient

⁷ Jing, Li. "Scan and Drive: Future Bright for Green Car-share Schemes." CGTN. February 05, 2017. Accessed May 06, 2019.

endurance. Usually, the battery is installed under the seats or under the automobile chassis to ensure the stability of the vehicle. With the development of the self-driving car, for making the car bigger, increasing the wheelbase become necessary, which means is a larger interior space. Consequently, the interior seats and controls of the car will become more flexible, and the seats and interiors will be very random and can be adjusted in different modes. (Figure 2)



Figure 2, New Interior Concept by Italian Design House Icona

Changes in Car Ownership — Car Sharing

Car Sharing is not a new idea or concept. It is a result reflected by the development of the market. The emergence of car sharing has caused a revolution in car design. Because of the purpose difference, so the needs of automobiles for sharing are different compared with private cars.⁸ (Figure 3) For car sharing, the user would like to use the automobile merely for a while, so clients do not have lots of requirements about the exterior or interior. Car sharing seems like public transportation such as taxis or high-speed rails. As long as it could be comfortable, safe, and convenient for transportation, car sharing does not need to design like a private car. Therefore, the design of car sharing should base on practicality, small and sufficient, and the storage space in the car does not have to be as much as the

⁸ Car sharing 2000: Sustainable transport' s missing link. 2000. Journal of World Transport Policy and Practice (special issue) 5 (September).

current car. therefore, car sharing should be designed as simple as possible, like public transportation.⁹



Figure 3, Car Sharing, by Sohu.com

New Control System

For the next generation automobile, the definition of the automobile as a carrier has gradually become blurred. Currently, the automobile loaded with more functions and devices depending on the purpose. For example, the mechanical button replaced by the screen, which means is the interaction system using in the past are not suitable for now. The Tesla model 3 central control design system is a



Figure 4, Tesla Model 3 Control System, by Tesla

⁹ "The Rise of Car-sharing in China." The Rise of Car-sharing in China | Urban Gateway. Accessed May 02, 2019.

signify revolution for the automotive industry. Figure 4 Tesla created a simple style of interior space and used the screen to replace the hardware buttons, and even the instrument panel is no longer exists. Almost all of the functions are integrated into the central control screen of the car. The driver can operate the vehicle by the screen.

The Change of Design Process

In the context of China's automobile design, thirty years ago, the People's Republic of China was an automotive backwater. Today it's the biggest market in the world. So, its consumers are demanding the best from automotive designers.¹⁰ However, without any technical support and sufficient resource to back up, 'copying' has become a shortcut for some enterprises. No matter whether it is to buy a manufacturing line or imitate the appearance of the successful model, it can't make fundamental progress. Thus, the China automobile industry developed the international cooperation and car design contest for improving the automobile design level.

A Rational Design Process

Compared with plagiarism in the past, the current development process clarifies the purpose and direction of the design. After investigation and research, the designer provides details of the automobile to meet the needs of the market. For example, In the early stage of product development, the initial concept and concept automobile is used for next decades researching and discussion. Concept design is a general description of the next-generation model or the car for the future, then, the designer can decide the basic parameters, structure, and performance of the car. Usually, the concept design may only show on the drawing, or it may make a physical prototype. the process of concept design is a technical reserve that may also be incorporated into a formal development plan. This makes the design results more in line with the requirements of Chinese users. For the early stage in the development of the automobile design concept, the study of local trend culture is an indispensable part of the design

¹⁰ Rosenberg, Zach. "Auto Designers Cater To China, the New Giant." Wired. June 04, 2017. Accessed May 06, 2019

process. Just as some companies have established Researching and Development centers in the world, which make the result of design have more competitive ability compared with other automobiles, therefore, the design must be fully considered local circumstance for improved the adaptability to fir the complex and varied conditions.

In Conclusion

In the long-term development, China's automobile industry has developed from the initial plagiarism to the current independent research and development. The Chinese manufacturers acquired a complete design knowledge in design an automobile. However, the most essential part of the automobile design is about the cognition of the people, society, and environment. And also, the automobile design is not a simple as usual. It needs to cooperate with multidiscipline. Thus, the principle of automobile design for China should comply with the circumstances, culture, and people of China, and developed by using some new technique for achieved further improvement.

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